AMENDMENTS TO THE CLAIMS

1. (**Previously Presented**) A method for treating a neuronal deficiency, comprising: administering bone marrow-derived cells by vascular administration to an individual having a neuronal deficiency and ameliorating at least one symptom of the neuronal deficiency, wherein the administered cells are autologous, syngeneic or allogeneic, and wherein the individual has a neuronal deficiency caused by Parkinson's disease or a vascular disease.

2. (**Canceled**).

3. (**Canceled**).

4. (**Previously Presented**) The method of claim 1, wherein said bone marrow-derived cells are autologous.

5. (**Previously Presented**) The method of claim 4, wherein said autologous bone marrow-derived cells are genetically modified.

6. (**Previously Presented**) The method of claim 1, wherein said bone marrow-derived cells are allogeneic.

7. (**Previously Presented**) The method of claim 6, wherein said allogeneic bone marrow-derived cells are genetically modified.

8. (**Previously Presented**) The method of claim 1, wherein said bone marrow-derived cells are administered in conjunction with a neuronal factor.

9. (**Previously Presented**) The method of claim 8, wherein said neuronal factor is selected from the group consisting of: nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), neurotrophin-3, -4, -5, -4/5 and -6 (NT-3, -4, -5, -4/5, -6), ciliary neurotrophic factor (CNTF), glial-derived neurotrophic factor (GDNF), growth promoting activity (GPA), luteinizing hormone releasing hormone (LHRH), KAL gene, insulin, insulin-like growth factor-I-alpha, I-beta, and -II (IGF-I-alpha, I-beta, -II), interleukins (e.g., IL-2, IL-6, and the like), platelet derived growth factors (including homodimers and heterodimers of PDGF A, B, and v-sis), retinoic acid (especially all-trans-retinoic acid), fibroblast growth factors (FGFs, e.g., FGF- 1, -2, -3),

epidermal growth factor (EGF), leukemia inhibitory factor (LIF), the neuropeptide CGRP, vasoactive intestinal peptide (VIP), gliobastoma-derived T cell suppressor factor (GTSF), transforming growth factor alpha, epidermal growth factor, transforming growth factor betas (including TGF-.beta.1, -.beta.2, -.beta.3, -.beta.4, and -.beta.5), vascular endothelial growth factors (including VEGF-1, -2, -3, -4, and -5), stem cell factor (SCF), neuregulins and neuregulin family members (including neuregulin-1 and heregulin), netrins, galanin, substance P, tyrosine, somatostatin, enkephalin, ephrins, bone morphogenetic protein (BMP) family members (including BMP-1, -2, -3 and -4), semiphorins, glucocorticoids (including dexamethasone), progesterone, putrescine, supplemental serum, extracellular matrix factors (including laminins, fibronectin, collagens, glycoproteins, proteoglycans and lectins), cellular adhesion molecules (including N-CAM, L1, N-cadherin), and neuronal receptor ligands (including receptor agonists, receptor antagonists, peptidomimetic molecules, and antibodies).

10. (**Previously Presented**) The method of claim 8, wherein said neuronal factor is administered with the bone marrow-derived cells.

11. (**Previously Presented**) The method of claim 8, wherein said neuronal factor is administered separately from said bone marrow-derived cells.

12. (**Previously Presented**) The method of claim 11, wherein said neuronal factor is administered intrathecally.

13. (**Previously Presented**) The method of claim 1, further comprising the step of mildly damaging the nervous system of the individual.

14. (**Canceled**).

15. (**Previously Presented**) The method of claim 1, wherein said bone marrow-derived cells are administered by intravenous administration.

16. (**Previously Presented**) The method of claim 1, wherein said bone marrow-derived cells are administered by intravenous infusion.

17. (**Previously Presented**) The method of claim 16, wherein said intravenous infusion is into a peripheral vein.

18.-20. **(Canceled)**.

21. **(Previously Presented)** The method of claim 1, wherein said subject is a human.

22. – 35. **(Canceled)**.

36. **(New)** A method for delivering bone marrow cells to the central nervous system, comprising: administering bone marrow-derived cells by vascular administration to an individual having a neuronal deficiency, wherein the administered cells are autologous, syngeneic or allogeneic, and wherein at least a portion of the administered bone marrow-derived cells enter the brain and acquire a neuronal marker.